

Amendments to the Claims:

This listing of claims replaces any and all prior claim lists.

Listing of Claims:

Claim 1 (currently amended). A copolymer of ethylene and α -olefin of from 4 to 20 carbon atoms, having melt flow rate of from ~~[[1]]~~ 1.5 to 100 g/10min, an activation energy for melt flow of 60 kJ/mol or more, melt tension at 190°C (MT), intrinsic viscosity ($[\eta]$) and a chain length A which satisfy the following formula (1) to (3), wherein the chain length A is a chain length at peak position of a logarithm normal distribution curve of a component having the highest molecular weight among logarithm normal distribution curves obtained by dividing a chain length distribution curve obtained by gel permeation chromatography measurement into at least two logarithm normal distribution curves.

$$2 \times \text{MFR}^{-0.59} < \text{MT} < 20 \times \text{MFR}^{-0.59} \quad (1),$$

$$1.02 \times \text{MFR}^{-0.094} < [\eta] < 1.50 \times \text{MFR}^{-0.156} \quad (2), \text{ and}$$

$$\log A \geq -0.0815 \times \log (\text{MFR}) + 4.05 \quad (3).$$

Claim 2 (currently amended). A copolymer of ethylene and α -olefin of from 4 to 20 carbon atoms, having melt flow rate of from ~~[[1]]~~ 1.5 to 100 g/10min, an activation energy for melt flow of 60 kJ/mol or more, melt tension at 190°C (MT), intrinsic viscosity ($[\eta]$) and a characteristic relaxation time (τ ; unit is sec) at a temperature of 190°C which satisfy the following formula (1), (2) and (4).

$$2 \times \text{MFR}^{-0.59} < \text{MT} < 20 \times \text{MFR}^{-0.59} \quad (1),$$

$$1.02 \times \text{MFR}^{-0.094} < [\eta] < 1.50 \times \text{MFR}^{-0.156} \quad (2), \text{ and}$$

$$\tau \geq 8.1 \times \text{MFR}^{-0.746} \quad (4).$$

Claim 3 (currently amended). The copolymer of ethylene and α -olefin of from 4 to 20 carbon atoms according to Claim 1 or 2, wherein a swell ratio (SR) and the $[\eta]$ satisfy a relation of the following formula (5) or (6):

in a case of $[\eta] < 1.20$,

$$-0.91 \times [\eta] + 2.262 < SR < 2 \quad (5), \text{ and}$$

in a case of $[\eta] \geq 1.20$,

$$1.17 < SR < 2 \quad (6).$$

Claim 4 (new). The copolymer of ethylene and α -olefin of from 4 to 20 carbon atoms according to claim 1, wherein the copolymer has a melt flow rate of from 1.5 to g/10 min.

Claim 5 (new). The copolymer of ethylene and α -olefin of from 4 to 20 carbon atoms according to claim 2, wherein the copolymer has a melt flow rate of from 1.5 to 8 g/10 min.

Claim 6 (new). The copolymer of ethylene and α -olefin of from 4 to 20 carbon atoms according to claim 1, wherein the copolymer has a melt flow rate of from 2.0 to 8 g/10 min.

Claim 7 (new). The copolymer of ethylene and α -olefin of from 4 to 20 carbon atoms according to claim 2, wherein the copolymer has a melt flow rate of from 2.0 to 8 g/10 min.